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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/570,839	12/18/2006	Theodor Doll	3222.1430000	8784

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WASHINGTON, DC 20005

EXAMINER

SUCH, MATTHEW W

ART UNIT	PAPER NUMBER
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2891

MAIL DATE	DELIVERY MODE
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10/16/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/570,839	Applicant(s) DOLL ET AL.	
	Examiner Matthew W. Such	Art Unit 2891	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 July 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-22 is/are pending in the application.
- 4a) Of the above claim(s) 3,5-12 and 14-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2,4,13 and 19-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 March 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/27/08 & 9/26/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group II in the reply filed on 3 July 2008 is acknowledged. The traversal is on the ground(s) that the examiner has not followed restriction practice under 35 U.S.C. 121 including showing independent or distinctness between Groups I and II by combination/subcombination and that there is no serious burden of search. This is not found persuasive because the present Application was filed in the United States under 35 U.S.C. 371. As such, restriction practice under 35 U.S.C. 121 is not applicable and lack of unity practice under 35 U.S.C. 121, 371 and 372 applies. See MPEP § 801, § 823, § 1850, § 1875, and § 1893.03(d), for example. Therefore, tests for independent or distinctness are not applicable and the Applicant's arguments are irrelevant to the lack of unity set forth in the Office Action dated 6 March 2008.

2. Furthermore, Applicant has provided a clear admission on the record (see Remarks Page 5, Lines 13-14) that the group IA and IB subject matter are obvious variants over each other. Even though the Applicant has elected Group II, should the subject matter of Group IA and IB be examined for the merits and the examiner finds one of the species unpatentable over the prior art, the admission that Group IA and IB are obvious over each other will be used in a rejection under 35 U.S.C. 103(a) of the other species.

3. The requirement is still deemed proper and is therefore made FINAL.

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Priority

4. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

5. The information disclosure statement (IDS) submitted on 26 September 2006 and 27 June 2008 are being considered by the examiner.

Drawings

6. The drawings are objected to because they fail to label all of the elements contained within and are not in English. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

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the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

7. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

8. As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

9. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: inclusion of the claimed subject matter in claims 2-4 with the same level of detail as presented in the claims. The specification currently is vague regarding the invention without the originally filed claims. The spacing of the lines of the specification is such as to make reading difficult. New application papers with lines 1½ or double spaced on good quality paper are required. A substitute specification in proper idiomatic English and in compliance with 37 CFR 1.52(a) and (b) is required. The substitute specification filed must be accompanied by a statement that it contains no new matter.

Claim Rejections - 35 USC § 112

10. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

11. Claims 19-21 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Specifically, claim 19 requires "a separation distance between the first electrode and second electrode is between ten nanometers and two thousand nanometers". This is not

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supported by the specification. The specification merely reads "adjacent electrodes tightly interspaced at distances ranging between 10 nanometers and several micrometers" (See Page 1, Lines 2-3). This does not provide sufficient support for the specific elements of the first electrode and second electrode having a distance of ten nanometers and two thousand nanometers. For example, the first and third electrode are also "adjacent". Furthermore, there is no disclosure that the "several microns" is "two thousand nanometers". Claim 20 recites "wherein the substrate is made of at least one of a polymer film and a glass". Such language provides for an interpretation that the substrate can be both the polymer film and glass as a single substrate. This is not supported by the specification, which only discloses that the substrate may be "a polymer film or glass" (see Page 1, Line 3), not a combination of the two. The specification is further unclear regarding this issue because it also excludes SiO₂ (see Page 1, Line 4), which is glass. Claim 21 recites "wherein the first electrode is made of at least one of chromium and gold". This is not supported by the specification, which provides little discussion of the inventive concept related to this claimed invention except for Figure 5, which appears to show only gold as the material for the first electrode.

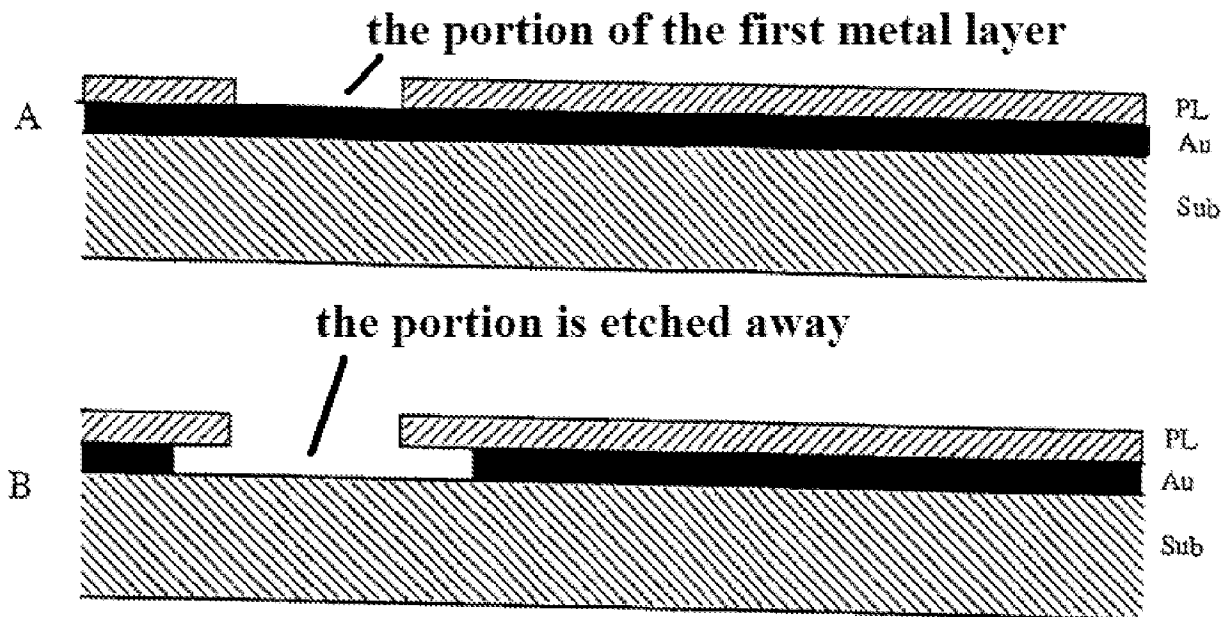
12. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

13. Claims 2, 4 and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The recitation of "the portion of the first metal layer"

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bridging Lines 13 and 14 renders the claim indefinite because "the portion of the first metal layer" has been etched and no longer exists. Therefore, it is unclear exactly what the Applicant is attempting to claim. For clarity of understanding the problem with this claim language the examiner refers to Figure 2:



14. Claim 4 and 13 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 4 recites the limitation "the third metal gate" in the second to last line of the claim. There is insufficient antecedent basis for this limitation in the claim. Furthermore, the claim recites "exposing the third metal gate at a position in the hole using a photolithographic process, which renders the claim indefinite because it is unclear what "the third metal gate" is exposed to and how the photolithographic process is "used" to affect any particular outcome.

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15. Claim 20 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claim requires "the substrate is made of at least one of a polymer film and a glass". However, it is unclear whether or not glass can actually be the substrate material since the specification appears to exclude SiO₂ (see Page 1, Line 4), which is glass, as the substrate material. As such, it is unclear exactly what is being claimed.

Claim Rejections - 35 USC § 102

16. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

17. In so far as definite, claim 2 is rejected under 35 U.S.C. 102(b) as being anticipated by Lishan ('884).

Lishan teaches a method for producing an electronic component with closely adjacent electrodes on a substrate (Element 12, Fig. 1) comprising depositing a first metal layer (Element 10, Fig. 1) on the substrate and structuring a first photo lacquer (Element 16, Fig. 1) on a surface of the first metal layer except a portion of the surface of the metal layer (see Figs. 1C and 1D, for example). The portion of the surface of the first metal layer is etched (Para. 0007-0008; see Fig. 1E, for example) and undercut etching of the first metal layer so that an overhang is formed by the first photo lacquer (see Element x compared to Element x' in Fig. 1). A surface of the first

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photo lacquer layer is exposed to a first metal vapor so that a second metal layer (Elements 22, 24, 26, Fig. 1) is formed on the surface of the first photo lacquer and "the portion of the surface of the first metal layer (see Fig. 1F, for example) except in a space between the overhang and the substrate (see Fig. 1F without metal in the region of Element 18). The first photo lacquer and the second metal layer formed on the surface of the first photo lacquer is removed (see Fig. 1G).

Claim Rejections - 35 USC § 103

18. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

19. In so far as definite, claims 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang ('155) in view of Scheifers ('915).

Huang teaches a bottom-gate organic transistor comprising a polymer film substrate (Element 12, Fig. 13; Para. 0023) with a first electrode source (Element 14, Fig. 13) formed on the substrate and a second electrode drain (Element 16, Fig. 13) formed on the substrate. The separation distance between the first and second electrodes is 1 micron, for example, or less (Para. 0035). A third electrode gate (Element 22, 34, Fig. 13) is formed in a hole (Element 24, Fig. 13) in the substrate in the separation between the first and second electrodes. An insulating layer (Element 30, Fig. 13) is formed on the third electrode gate. An organic semiconductor layer (Element 28, Fig. 13) is formed on the first electrode, second electrode, and insulator.

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The language, term, or phrase "wherein the separation between the first electrode and the second electrode is formed by forming a photo lacquer layer on a portion of a first metal layer formed on the substrate, etching a portion of the first metal layer, undercut etching the first metal layer to produce an overhang of the photo lacquer layer, depositing a second metal layer on the substrate at a position of the portion of the first metal layer, and removing the photo lacquer layer", is directed towards the process of making the electrodes. It is well settled that "product by process" limitations in claims drawn to structure are directed to the product, per se, no matter how actually made. In re *Hirao*, 190 USPQ 15 at 17 (footnote 3). See also, In re *Brown*, 173 USPQ 685; In re *Luck*, 177 USPQ 523; In re *Fessmann*, 180 USPQ 324; In re *Avery*, 186 USPQ 161; In re *Wethheim*, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); In re *Marosi et al.*, 218 USPQ 289; and particularly In re *Thorpe*, 227 USPQ 964, all of which make it clear that it is the patentability of the final product per se which must be determined in a "product by process" claim, and not the patentability of the process, and that an old or obvious product produced by a new method is not patentable as a product, whether claimed in "product by process" claims or otherwise. The above case law further makes clear that applicant has the burden of showing that the method language necessarily produces a structural difference. As such, the language "wherein the separation between the first electrode and the second electrode is formed by forming a photo lacquer layer on a portion of a first metal layer formed on the substrate, etching a portion of the first metal layer, undercut etching the first metal layer to produce an overhang of the photo lacquer layer, depositing a second metal layer on the substrate at a position of the portion of the first metal layer, and removing the photo lacquer layer" only requires the electrodes, which does not distinguish the invention from the teachings of Huang.

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Huang does not teach a sealing layer formed on the organic semiconductor. Scheifers teaches a conventional bottom-gate transistor with a sealing layer (Element 16) on the organic semiconductor (Element 14). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the sealing layer configuration taught by Scheifers in the device of Huang. One would have been motivated to do so since Scheifers teaches that the sealing layer protects the organic semiconductor from moisture and oxygen, thereby improving the device performance (see Abstract, at least).

Huang teaches that the electrodes can be formed of conductive electroplatable materials without explicitly citing the conventional materials of gold and chromium (Para. 0025). However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use either gold or chromium, since such materials provide low contact resistance and are conventional electroplatable materials. It has been held that the selection of a known material based on its suitability for its intended use supported a prima facie obviousness determination in *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). See also *In re Leshin*, 227 F.2d 197, 125 USPQ 416 (CCPA 1960). MPEP § 2144.07.

Contact Information

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew W. Such whose telephone number is (571) 272-8895. The examiner can normally be reached on Monday - Friday 9AM-5PM EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sue Purvis can be reached on (571) 272-1236. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Matthew W. Such
Examiner, Art Unit 2891

MWS
10/9/08

/Douglas M Menz/
Primary Examiner, Art Unit 2891
10/10/08